THE PLANT DISEASE REPORTER

Issued by

THE PLANT DISEASE SURVEY

DIVISION OF MYCOLOGY AND DISEASE SURVEY

Volume XXV Number 13

July 15, 1941

IN THIS ISSUE

Check list revision, by Freeman Weiss, page 340.

Among the noteworthy plant diseases reported from the Lower Rio Grande Valley by G. H. Godfrey, page 347, is the tobacco downy mildew, found on pepper and on a wild tobacco.

A. H. Eddins reports that unfavorable weather conditions reduced losses from potato diseases in the Hastings section of Florida, page 353.

W. G. Boen and R. E. Vaughan report on late blight, on Long Island and in Wisconsin, respectively, page 354.

The incidence of peach leaf curl in Illinois in 1941 is reported by G. H. Boewe, page 355.

W. W. Diehl reports a Leptosphaeria found on leaves of corn from Costa Rica; cereal diseases in Texas and Kansas are reported by I. M. Atkins and by C. O. Johnston; and Geo. M. Armstrong sends a correction to the report of small grain diseases in South Carolina given in an earlier issue, page 359.

Brief notes, page 361: The western sand cherry has been found to be a host for the X-disease virus, according to E. M. Stoddard, and A. G. Newhall reports the recurrence of the bulb nematode on onions in New York.

June weather, page 362.

CHECK LIST REVISION

Freeman Weiss

LUCUMA (SAPOTACEAE)

LUCUMA spp. Shrubs or trees of tropical America, some bearing edible fruit as L. NERVOSA A. DC., CANISTEL, cult. and locally naturalized in Fla.; others of timber value.

Acrotelium lucumae (Arth. & Johnst.) Cumm., rust (II, III). Fla.
Colletotrichum gloeosporioides (Penz.) Sacc. fruit spot. Fla.
Meliola lucumae F. L. Stevens, black mildew. P. R.
Pestalotia (Pestalozzia) lucumae Tehon, on leaves. P. R.
Physalospora obtusa (Schw.) Cke., on branches. S. C.

LUPINUS (LEGUMINOSAE)

LUPINUS spp. (fruticose or arborescent). Several spp. of evergreen shrubs or small trees as L. ALBIFRONS Benth., L. ARBOREUS Sims, and L. CHAMISSONIS Esch. in Growth Regions 1, 4, 5, 10, useful chiefly in soil conservation.

Armillaria mellea Vahl ex Fr., root rot. Calif.
Collybia velutipes Curt. ex Fr., wound rot. Calif.
Cryptosporium lupini Cke., on stems. Calif.
Diaporthe lupini Harkn., on stems. Calif.
Didymella lupini (Cke. & Harkn.) Berl. & Vogl., on stems. Calif.
Diplodia lupini Cke. & Harkn., on stems. Calif. (Conidial stage of Physalospora mutila (Fr.) N. E. Stevens?)
Erysiphe polygoni DC., powdery mildew. Widespread.
Fusarium sp., wilt. Calif., T. H.
Hadrotrichum globiferum (Ell. & Ev.) Davis (Ovularia globifera Ell. & Ev.), on leaves. Calif., Colo.,Wash.
Hendersonia lupini Cke. & Harkn., on stems. Calif.
Heterodera marioni (Cornu) Goodey, root knot. Occasional.
Macrophoma lupini (Cke. & Harkn.) Berl. & Vogl., on stems. Calif.
Nectria eucalypti (Cke. & Harkn.) Sacc. (?N. depallens Cke. & Harkn.) and N. sanguinea Bolt. ex Fr., on stems. Calif.
Phyllosticta ferax Ell. & Ev., leaf spot. Calif. to Colo. and Wash.
Pleurotus ostreatus Jacq. ex Fr., wound rot. Calif.
Pratylenchus pratensis (DeMan) Filipjev, in roots. Calif.
Pythium sp., damping off. Calif.
Sphaeropsis lupini Cke. & Harkn. on stems. Calif. (Conidial stage of Physalospora mutila?).
Uromyces lupini Berk. & Curt., rust (0, I, II, III). Nebr. to Wash. and Calif.
U. occidentalis Diet. (U. substriatus Syd.) rust (II, III). Mont. to Colo., Calif. and Oreg.

LUPINUS spp.--Continued

Valsa lupini Cke. & Harkn., on stems. Calif.

LUPINUS spp. (herbaceous). Annual or perennial herbs, native in various parts of the U. S., especially the Rocky Mt. and Pacific Coast States. The spp. cult. most commonly for soil improvement, forage, and ornament are annuals, as L. ALBUS L., L. LUTEUS L., L. HIRSUTUS L., L. PUBESCENS Benth. (L. hybridus Voss).

(Aecidium lupini Pk., and A. onobrychidis Burr.): Puccinia andropogonis Schw. var. onobrychidis.
Alternaria sp., leaf spot. Mass.
(Ascochyta pisi Lib.): Mycosphaerella pinodes.
Botrytis cinerea Pers., wilt. Mass.
Cercospora longispora Pk. (C. filispora Pk.), leaf spot. Mo., N. Y., Wis.
C.lupini Cke., leaf spot. Fla., S. C., Oreg.
C.lupinicola Lieneman (C. texensis Tharp), Texas.
Comandra pallida A DC., on roots. Wash.
Cylindrosporium lupini Ell. & Ev., on leaves. Calif.
Diaporthe lupini Harkn., on stems. Calif.
Erysiphe polygoni DC., powdery mildew. Widespread.
Hadrotrichum globiferum (Ell. & Ev.) Davis, on leaves. Calif., Colo., Idaho, Wash.
Heterodera marioni (Cornu) Goodey, root knot. Widespread.
Macrophomina phaseoli (Maubl.) Ashby, root rot. Calif.
Mycosphaerella pinodes (Berk. & Blox.) Stone, leaf spot. Wis.
Peronospora trifoliorum D By., downy mildew. Wis.
Phoma lupini Ell. & Ev., on leaves. Colo., Pacific Coast States.
Phyllosticta ferax Ell. & Ev., leaf spot. Calif. to Wash. and Wyo.
P. lupini Bonar, Calif.
Phymatotrichum omnivorum (Shear) Dug., root rot. Texas.
Puccinia andropogonis Schw. var. onobrychidis (Burr.) Arth. rust (O, I). N. Y., Mich., Wis. to Colo. and Wyo. II and III on Andropogon spp.
Pythium debaryanum Hesse, damping off. Texas.
Ramularia lupini J. J. Davis, leaf spot. Texas.
Rhizoctonia solani Kühn, stem rot. Occasional
Sclerotinia sclerotiorum (Lib.) DBy., stem rot. N. Y.
Sclerotium rolfsii Sacc., Southern blight. Texas.
Septogloeum lupini Ell. & Ev., on leaves. Mich.
Septoria lupini Harkn., on leaves. Calif.
S. lupinicola Dearn., Wis.
Sorosporium astragali Pk., smut. Wyo.
Uromyces lupini Berk. & Curt., rust (O, I, II, III). Rocky Mt. and Pacific Coast States.
U. occidentalis Diet., rust (II, III). Rocky Mt. and Pacific Coast States.

LYCIUM (SOLANACEAE)

LYCIUM spp. Several kinds of spiny shrubs, some partly evergreen, known as DESERT-THORNS, native in the Southwestern States; and L. CAROLINIANUM Walt; CHRISTMASBERRY, similar, extending eastward to Fla.

Aecidium lycii Arth., rust (O, I). Ariz.
Oidium sp., powdery mildew. La.
Phymatotrichum omnivorum (Shear) Dug., root rot. Texas.
Puccinia globosipes Pk., rust (II, III). Utah to N. Mex. and Calif. (O and I unknown.)
P. tumidipes Pk., rust (II, III). Texas to Ariz. and Utah. (O and I produced on same host by artificial inoculation.)

LYCIUM HALIMIFOLIUM Mill., MATRIMONY VINE. Vine or recumbent shrub of Europe, cult. for ornament and locally naturalized widely in the U. S.

Alternaria sp., leaf spot. Iowa
Cercospora lycii Ell. & Hals., leaf spot. Iowa.
Erysiphe polygoni DC., powdery mildew. Widespread
Microsphaera diffusa Cke. & Pk. powdery mildew. Ohio, Pa., Utah. (Sometimes reported as M. lycii (Lasch.) Sacc. & Roum., which is M. mougeotii Lév., and not authenticated in the U. S.)
Phyllosticta lycii Ell. & Kell., leaf spot. N. Y., Ohio.
Puccinia tumidipes Pk., rust (II, III). Pa. to Ala., Ariz. and S. Dak.
Sphaerotheca pannosa (Wallr.) Lév., powdery mildew. Wash.
Sphaeropsis lycii Dearn. & Barth., on stems. Mo.

LYONIA (ERICACEAE)

LYONIA (XOLISMA) spp. Evergreen shrubs of E. and S. E. U. S., adapted to cult. for ornament, especially L. LIGUSTRINA (L.) DC., MALEBERRY in Zone III; L. LUCIDA (Lam.) K. Koch, FETTER-BUSH in Zone VII, and L. MARIANA (L.) D. Don, STAGGER-BUSH, in Zone V.

Asterina lepidigena Ell. & Mart., black leaf spot. Fla.
Cryptosphaeria vexata (Cke. & Ell.) Sacc.
Cucurbitaria longitudinalis Pk., on dead stems. Mo., N. J., N. Y.
Diaporthe ligustrina Ell. & Ev.
Didymosphaeria grumata (Cke.) Rehm, on twigs. N. J.
Exobasidium vaccinii (Fckl.) Wor., leaf gall, shoot hypertrophy. Mass. to Fla. and Ala.
Gloniopsis cookeana (Gerard) Sacc.,
Linospora ferruginea Ell. & Mart., Fla.
Microsphaera alni var. vaccinii (Schw.) Salm., powdery mildew.
Phacidium vaccinii Fr., on leaves. Fla.
Physalospora obtusa (Schw.) Cke., on branches.

LYONIA (ERICACEAE)--Continued

Poria vaporaria Fr., Me.
Pucciniastrum myrtilli (Schum.) Arth., rust (II, III). Del. to Ala. and Ark. (O and I on Tsuga canadensis.)
Rhytisma andromedae Fr. and R. decolorans Fr., tar spot. Widespread. (Might be designated respectively as large and small tar spots.)

LYSILOMA (LEGUMINOSAE)

LYSILOMA BAHAMENSIS Benth., BAHAMA LYSILOMA. Small tree of Fla. keys and Bahama Is. L. LATISILIQUA (L.) Benth. of Cuba and Lesser Antilles is sometimes cult. for ornament.

Fomes extensus (Lév.) Cke., white pocket heart rot. Fla.
Ravenelia annulata Long and R. lysilomae Arth., rust (II,III). Fla.

MAACKIA (LEGUMINOSAE)

MAACKIA AMURENSIS Rupr. Deciduous tree of Manchuria, cult. for ornament in Zone IV.

Phymatotrichum omnivorum (Shear) Dug., root rot. Texas.

MACADAMIA (PROTEACEAE)

MACADAMIA TERNIFOLIA F. Muell. QUEENSLAND NUT. Australian nut-bearing tree cult. in S. Calif., S. Fla. and T. H.

Gloeosporium sp., flower blight. T. H.

MACLURA (MORACEAE)

MACLURA POMIFERA (Raf.) Schneid., OSAGE-ORANGE. Native tree of Growth Regions 20, 22, 25, 27, 28, 29, 30; widely cult., often for hedges; hardy in Zone V.

Botrytis cinerea Pers., on stems. Oreg.
Cercospora maclurae Ell. & Ev., leaf spot. Ala.
(Cytospora maclurae Ell. & Barth.): Valsa maclurae
Daldinia concentrica (Bolt. ex Fr.) Ces. & De Not., N. C.
Dothidea crystallophora Berk. & Curt., (D. tetraspora Berk. & Br.) on twigs. N. Y., N. J., Pa.
Nectria cinnabarina Tode ex Fr., on twigs. Ind., N. Mex.
Ovularia maclurae Ell. & Langl., cottony leaf spot. Ala., La., Texas.
Phoradendron engelmanni Trel., mistletoe. Texas.
P. flavescens (Pursh) Nutt. Ind., Texas.

MACLURA (MORACEAE)--Continued

Phyllosticta maclurae Ell. & Ev., leaf spot, leaf distortion. Mo., N. J.
Phymatotrichum omnivorum (Shear) Dug., root rot. Texas.
Physalospora obtusa (Schw.) Cke., on branches. N. Y. to Ala., La. and Kans.
Physopella fici (Cast.) Arth., rust (II). S. C. to Fla. and Texas.
Poria ferruginosa Schrad. ex Fr.
P. punctata Fr., on dead wood. Widespread.
Septoria angustissima Pk., on leaves. Miss.
Sphaerella maclurae Ell. & Ev. Mo.
(Sphaeropsis maclurae Cke.): Physalospora obtusa
Sporodesmium maclurae Thuem., leaf blight. Mo., S. C. Texas.
Tryblidiella rufula (Spreng.) Sacc., on twigs. Gulf States, Kans.
Valsa maclurae Cke. & Ell., (Eutypella m. (Cke. & Ell.) Ell. & Ev.) on dead branches. N. J., Kans.

MAGNOLIA (MAGNOLIACEAE)

MAGNOLIA spp. Occurring on various or undetermined spp.

Acanthostigma berenice (Berk. & Curt.) Sacc., on leaves. S. C. to Fla. and La.
Alternaria tenuis Nees,--leaf spot.--Texas.
(Asterina comata Berk. & Rav.): Trichodothis comata.
Botryosphaeria ribis var. chromogena Shear et al., on branches. Ala.--Fla.
Cephaleuros virescens Kze., green scurf. Southern States.
Cladosporium fasciculatum Cda., on leaves. Widespread.
Colletotrichum sp., ? leaf spot. N. J. to Fla.
Cucurbitaria congesta Cke. & Ell., on dead branches. N. J.
Daedalea ambigua Berk. Ala.
Daldinia concentrica (Bolt. ex Fr.) Ces. & DeNot. and D. verniciosa (Schw.) Ces. & DeNot. wood rot. Cosmopolitan
Diaporthe eres Nit. (D. magnoliae Ell. & Ev.), on branches. Ala., Md., N. J., N. Y.
Diaporthe binoculata (Ell.) Sacc., N. J., N. Y., N. C., W. Va.
Exophoma magnoliae Weedon, leaf spot. Fla., Texas.
Fomes spp., wood rots, sometimes on living trees:

F. applanatus (Pers. ex Fr.) Gill., Md.
F. geotropus Cke., Lower Miss. Valley, N. J.
F. ohiensis Berk., Va.
F. pinicola (Sw. ex Fr.) Cke.

Gloeodes pomigena (Schw.) Colby, on branches. Ind.
Heterodera marioni (Cornu) Goodey, root knot. Ga., Texas.
Meliola spp. (M. amphitricha Fr., M. magnoliae F. L. Stevens), black mildew. Gulf States. P. R.

MAGNOLIA spp. --Continued

Nectria cinnabarina Tode ex Fr., on branches. N. Y., W. Va.
N. coccinea Pers. ex Fr. N. J., W. Va.
Nummularia discreta (Schw.) Tul., on branches. Occasional
Pestalotia (Pestalozzia) guepini Desm., on leaves. Southern States.
Phoma melaleuca Berk. & Curt., on branches.
Phomopsis sp., on branches. N. Y., Pa., Va.
P. viridarii Grove.
Phyllosticta cookei Sacc. ?(P. magnoliae Sacc.), leaf spot. N. Y. and W. Va. to Gulf States, Calif.
P. glauca Cke., S. C. to Ala. and Fla.
P. magnoliae Sacc., large leaf spot. N. J. and N. Y. to Gulf States.
P. terminalis Ell. & Mart., N. J.
Physalospora fusca N. E. Stevens, on branches. Fla.
P. obtusa (Schw.) Cke., Va. to S. C.
Polyporus spp. (P. adustus Willd. ex Fr., P. cinnabarinus Jacq. ex Fr., P. crocatus Fr., P. distortus (Schw.) Fr. P. hirsutus Wulf ex Fr., P. spumeus Fr., P. tulipiferus (Schw.) Overh., P. velutinus Pers. ex Fr., P. westii Murr.), wood rots, sometimes on living trees.
Poria spp. (P. mollusca (Pers.) Bres., P. vaporaria Fr., P. versipora (Pers.) Romell), wood rot., P. cocos (Schw.) Wolf, tuckahoe, on roots. Fla., P. incrassata (Berk. & Curt.) Burt, dry rot of timber.
Pratylenchus pratensis (DeMan.) Filip., in roots of M. kobus DC.
Protostegia magnoliae (Rav.) Sacc., on leaves. S. C. to Fla. and Texas.
Rhizoctonia solani Kühn, seedling blight. N. J.
Stereum spp.: S. albobadium (Schw.) Fr., S. hirsutum Willd. ex Fr.
Trichodothis comata (Berk. & Rav.) Theiss. & Syd., black mildew. Gulf States.
Tryblidiella rufula (Spreng.) Sacc., on twigs. Gulf States.

MAGNOLIA ACUMINATA L., CUCUMBERTREE. Large, deciduous tree of Growth Regions 22, 24, 25, 27, 28, 29, 30.

Microsphaera alni DC. ex Wint., powdery mildew. Md., Pa.
Nectria sp., canker. W. Va.
Pezizella oenotherae (Cke. & Ell.) Sacc. (Sclerotiopsis concava (Desm.) Shear & Dodge), on branches. N. C.
Phyllactinia corylea Pers. ex Karst., powdery mildew. Ohio, Pa.
Phyllosticta cookei Sacc., leaf spot. W. Va.
Torula ligniperda (Willk.) Sacc., pink wood stain. Occasional.

MAGNOLIA FRASERI Walt., FRASER MAGNOLIA, (Mountain magnolia). Large deciduous tree of Growth Regions 27, 28.

Cytospora tumulosa Ell. & Ev., on branches. W. Va.
Nectria coccinea Pers. ex Fr., canker. W. Va.

MAGNOLIA--Continued

Phoma pedunculi Ell. & Ev., on stems. W. Va.
Phyllactinea corylea Pers. ex Karst., powdery mildew.
Phyllosticta magnoliae Sacc., leaf spot. W. Va.

MAGNOLIA GRANDIFLORA L., SOUTHERN MAGNOLIA. Large evergreen tree of Growth Regions 28, 29, 30.

Cephaleuros virescens Kze., green scurf. General.
Cercospora magnoliae Ell. & Harkn. Fla., Va.
Cladosporium fasciculatum Cda., on leaves, ?leaf spot. Ga. to Texas.
Colletotrichum sp., ?leaf spot, also on twigs. Fla., Ga., S. C.
Coniothyrium olivaceum Bon., leaf spot. Texas.
Corticium koleroga (Cke.) Höhn., thread blight. S. C.
Epicoccum nigrum Lk., leaf spot. Texas.
Exophoma magnoliae Weedon, leaf spot. Fla., Texas.
Fomes fasciatus (Sw. ex Fr.) Cke., heart rot, on living trees.
F. geotropus Cke., heart rot, La. on living trees; N. Y.
Heterosporium magnoliae Weedon, leaf spot. Fla., N. C., Texas.
Leptothyrella langloisii (Ell. & Ev.) Sacc., on leaves. La.
Meliola amphitricha Fr., black mildew. Gulf States.
Pestalotia (Pestalozzia) guepini Desm., on leaves. General.
Phyllosticta magnoliae Sacc., large leaf spot. S. C. to Texas.
Phymatotrichum omnivorum (Shear) Dug., root rot. Texas.
Septoria magnoliae Cke., leaf spot. S. C. to Texas.
S. niphostoma Berk. & Curt., Fla., N. and S. C.
Sirodesmium stictophyllum (Cke.) Sacc., on leaves. S. C.
Trichodothis comatus (Berk. & Rav.) Theiss. & Syd., black mildew. Southern States.

MAGNOLIA SOULANGEANA Soul., SAUCER MAGNOLIA. Large shrub or small tree, of hybrid origin (M. denudata x M. liliflora), cult. in several horticultural forms, hardy in Zone V but often suffering injury from spring frosts.

Phyllosticta magnoliae Sacc., leaf spot. N. J., N. Y., Ohio.
Tubercularia sp. (?Nectria cinnabarina Tode ex Fr.), twig blight. Mich.

MAGNOLIA VIRGINIANA L. (M. glauca L.), SWEETBAY. Evergreen tree or large shrub of Growth Regions 27, 28, 29, 30 (inclusive of the southern var. AUSTRALIS Sarg.); also cult.

Cercospora magnoliae Ell. & Harkn., leaf spot. N. J.
Cladosporium fasciculatum Cda., ?leaf spot. Md., N. J., N. Y.
Diaporthe binoculata (Ell.) Sacc., on dead branches. N. J., N. C.
Didymosphaeria magnoliae Miller & Thompson, on dead leaves. Ga.
Dothidella concaviuscula (Ell. & Ev.) Theiss. & Syd., on dead branches. N. J.

MAGNOLIA--Continued

Gnomonia magnoliae Ell., on fallen leaves. N. J., Ga.
Guignardia (Laestadia) magnoliae (Schw.) Miller, on leaves. Fla., Ga., N. J.
Irene araliae (Spreng.) H. Syd., black mildew. Miss.
Melanconium magnoliae Ell. & Ev., on dead trunk. N. J.
Meliola amphitricha Fr., black mildew. Gulf States.
Micropeltis alabamensis Earle, black leaf spot. Ala.
Mycosphaerella annulata (Cke.) Miles, on leaves. Fla., La., Miss.
M. glauca (Cke.) Miles, Miss., S. C.
Phomopsis sp., on leaves. Fla.
Phyllosticta cookei Sacc., leaf spot. Fla., Miss., N. J., N. Y.
P. glauca Cke., Ala., Fla., N. and S. C.
P. magnoliae Sacc., N. J.
Septobasidium langloisii Pat. and S. tenue Couch, on scale insects infesting bark. Gulf States.
Sirodesmium ellipticum (Cke.) Sacc., on leaves. S. C.
Sporodesmium rude Ell., on leaves. N. J.
Valsa ambiens Pers. ex Fr., on branches. N. Y.
Venturia applanata Ell. & Mart., on leaves. Fla.

(Division of Mycology and Disease Survey.)

NOTEWORTHY DISEASES OF ECONOMIC CROPS AND NATIVE PLANTS IN LOWER RIO GRANDE VALLEY IN THE SPRING OF 1941

G. H. Godfrey

The late winter and spring of 1941 were far above normal in total precipitation and in percentage of cloudy and partly cloudy days. At the Valley Experiment Station at Weslaco the rainfall during the period covered by this report, from December 15 to June 27, was 37.8 inches which was 14.2 inches higher than the 26 year average for an entire year.

One effect of the excessive rainfall and higher humidity than normal has been a great increase in the amount of foliage diseases in crop plants and in native weeds. In addition there has been an increase over the usual amount of mineral-deficiency chlorosis and in temporary nitrogen starvation, due to the excessive leaching of the soluble elements out of the root feeding zones of the soil.

Credit is due the Division of Mycology and Disease Survey for identification on most of the mycological material reported herein.

Citrus diseases

Melanose (Phomopsis citri). Widely distributed in the Valley, but not universal, has been an unprecedented outbreak of melanose, particularly on grapefruit. The first flush of leaf growth in the spring

and subsequent growth flushes have become extremely spotted in both leaves and twigs, and much defoliation has occurred. Young fruits are much more heavily infected than usual.

Scab (Sphaceloma fawcettii). This disease in the past has never been sufficiently severe on grapefruit to justify a regular spraying program. This season caught the growers unprepared, and much damage is evident. Lemons and grapefruit are extremely heavily infected in scattered groves. Groves that had received a heavy early spring fertilization and that had dense heavy leaf development, showed more fruit scab than did those with lighter foliage.

Seed-bed diseases. Nursery seed-beds, mostly of sour orange, have this year shown more losses from the dying of plants than normal. One large seed-bed was practically a total loss due to the killing of roots by the meadow (or root-lesion) nematode, Pratylenchus pratensis. In another seed-bed grown in half shade, on new land, damping off was severe, and the causal organism, a species of Phytophthora, was found fruiting on stems and collapsed leaves.

Chlorosis. Zinc-deficiency chlorosis has definitely been more severe than usual this year. It is distinguished by shorter than normal twig growth, and a cluster of small pointed leaves with a mottling ranging from nearly white to pale green, always darker in the midrib than at the margins. Other deficiencies are appearing as well, including probably iron, manganese, and occasionally magnesium.

Vegetable diseases

Bean. Bacterial blight, Bacterium phaseoli EFS. was destructive in many fields, causing total loss of early pickings. Rapid growth of the pods during later periods of dry weather permitted the harvesting of substantial crops of blight-free beans at a good price.

Chlorosis. Some late fields are extremely yellow owing probably to the fact that the beans have been standing for several days with their roots in water. Nitrogen starvation is a probable factor.

Cabbage. Downy mildew, Peronospora parasitica, was destructive in the fall seedbeds. Some beds were completely destroyed. On the Station plantings and some commercial fields, fungicidal applications checked the disease sufficiently that a good stand of plants was obtained for field planting.

Black rot, Bacterium campestre [Phytomonas campestris], was below the level of severity of some years. An exception was a field of Marion Market transplanted from an old seed-bed. Some late secondary mild marginal infection occurred in many fields but damage to heads was negligible.

Black leaf spot, Alternaria brassicae, as reported before (P. D. R. 25:119-120, Mar. 1, 1941) was exceedingly destructive and caused many thousands of dollars loss to commercial growers. In late cabbage its symptoms were complicated by necrotic areas from secondary black rot infections initiated by worms.

Cowpea (including black-eye). Pod and leaf blight, Cladosporium vignae, is here reported for the first time from this section. It was seriously destructive on a commercial planting of Black-eye pea on May 1. On May 30 specimens brought to the laboratory from another section of the Valley showed it to be serious on Black-eye and Cream, but Crowder in the same field was scarcely damaged.

Cucurbits. Cantaloupes and watermelons were late in getting started, due to adverse weather conditions. Recently specimens of downy mildew Peronoplasmopara cubense [Pseudoperonospora cubensis] on both hosts have been seen. Last year the disease did not occur, and good crops were obtained from the occasional fields that were planted. This year, with increased plantings, downy mildew has been bad.

Mustard, Curly. Downy mildew, Peronospora parasitica, and white rust, Albugo candida, were both present in serious proportions both in the Lower Valley and near Robstown in the Coastal Bend section of Texas.

Onion. A leaf blight (cause not definitely established), characterized by white leaf spots and a leaf-tip blight, culminating in the death and collapse of outer leaves, has been much more abundant than usual in the extensive Willacy County fields, in the Valley Counties proper (Hidalgo and Cameron) and in the Coastal Bend section. An acre field on the Station was a total loss. Specimens were also brought in from the Laredo area, though it was less severe there. Throughout the badly affected areas unfavorable environmental conditions including long-continued standing in muddy fields may have been an important contributing factor to the crop failure.

Pepper. Downy mildew, Peronospora tabacina, (identified by J. A. Stevenson and E. E. Clayton of the U. S. Bureau of Plant Industry) caused slight early damage in a small pepper seed-bed at this Station. A single dusting with red copper oxide checked the disease and there was no recurrence.

Mosaic. Two pepper fields of several acres each, slightly damaged by an early November frost, were held for a possible spring crop. A further set-back from cold occurred in January. By the time spring fruiting was normally to be expected, most of the plants in both fields were seriously dwarfed by mosaic (strain not identified) and by root-knot nematodes (Heterodera marioni), and the spring crop was a total failure.

Potato. Late blight, Phytophthora infestans, very late in its appearance in spite of the wet spring, has already been reported.

(P. D. R. 25: 267-8, May 15, 1941) (Since this report was written, I have been informed through authentic sources that late blight does not occur on potatoes in North Dakota.)

Early blight, Alternaria solani, was delayed in its serious manifestations until the crop was practically made in most fields. Only the late-planted fields were damaged.

Psyllid yellows was not a factor this year, in direct contrast with the previous spring crop in which it was extensive in occurrence, and severe.

Scab, Actinomyces scabies, has increased alarmingly in Cameron County's potato fields, as a result, perhaps, of repeated plantings on the same land. Some fields were still relatively free while others showed a high percentage of loss.

Bacterial soft rot, Bacillus carotovorus [Erwinia carotovara] was high in potatoes harvested early from fields that were still wet. Prolonged washing to remove clinging soil and insufficient drying before shipping probably contributed to high transit losses during a critically humid period. Potatoes harvested from dry fields and packed during dry weather generally reached the terminal markets without loss.

Spinach. White rust, Albugo occidentalis Wilson, was found as barely a trace in a field near the experiment station, and is reported as a record of the first occurrence in the Valley. The disease was also found at Robstown, in the Coastal Bend district.

Sweet corn. Pythium stalk rot, Pythium butleri, first reported as of economic importance in 1938 (T. A. E. S. Ann. Rpt. 1938, p. 239), did not occur to any great extent in 1939 and '40 but was again serious this year.

Leaf blight, Helminthosporium turcicum, was abundant and seriously damaging in some fields of both field and sweet corn.

Tomato. Early blight, Alternaria solani, has been abundant and serious on early planted tomatoes. On the Station field which was planted late and upon which a dusting experiment has been conducted, no damage had been done up to the close of the shipping season.

Bacterial spot, Bacterium vesicatorium [Phytomonas vesicatoria] has this year caused serious economic loss to tomato growers. Some truckloads received at packing plants showed 65 percent of the fruits affected; and at least one, reported as 90 percent affected, was turned back to the grower. Most of the manifestation of the disease was on the fruit, with relatively little foliage injury. In no previous year, insofar as the writer has been able to determine, has damage from this disease been so great. Some of the diseased fruit came from plants said to have been

grown on virgin land. Seed transmission must certainly have been a factor in bringing about the serious epiphytotic.

Soil rot (Rhizoctonia solani), buck-eye rot, Phytophthora terrestris, [P. parasitica] and another phytophthora rot tentatively called "false buckeye", caused exceedingly heavy percentage losses (ranging up to 66 percent) of fruit in the field, following periods of rainfall. Considerable decay occurred in packing houses in fruit that had been picked too soon after a rain.

Field crops

Alfalfa. Rust, Uromyces striatus medicaginis (Pers.) Arth. was abundant throughout the spring and up to present date, resulting in heavy defoliation in some fields. Darluca filum was present on much of the rust.

Root rot, Phymatotrichum omnivorum, became active in a 200 acre field early in June, and spots have increased greatly in size since then.

Cotton. Angular leaf spot, Bacterium [Phytomonas] malvacearum, made its appearance early in the season on some farms with extreme injury to the foliage. Most fields in the Weslaco area, however, are free from the disease, or relatively so.

Root rot, Phymatotrichum omnivorum, which might normally be expected to be severe this season because of the wetness of fields, is late in making its appearance in cotton.

Flax. Rust, Melampsora lini, was extremely severe on commercial plantings of Punjab and other non-resistant varieties, and caused total loss in many fields. Resistant Argentine varieties stood up very well in the Station flax nursery.

Pasmo, Phlyctaena linicola [Sphaerella linorum], occurred extensively on flax in general, including the Argentine varieties late in the season.

Anthracnose, Colletotrichum lini, was abundant and severe, causing much shedding of bolls, in commercial fields and throughout the Station nursery.

Leaf spot, apparently caused by a species of Alternaria, caused considerable leaf shedding in the nursery.

Wheat. Stem rust, Puccinia graminis, first appeared in the nursery planting about the middle of March on one or two varieties, and later spread to others. Leaf rust, P. triticina [P. rubigo-vera tritici], was abundant and severe on all except definitely resistant strains.

Diseases of Ornamentals

Canna. Leaf rust, Puccinia cannae P. Henn. II. was collected early in the spring. It is not at all general, and not particularly destructive.

Gladiolus scab, Bacterium marginatum [Phytomonas marginata] regularly affects the production of gladiolus in this section, and it has been present as usual this season.

Iris, Bulbous. Bulb rot caused by Sclerotium rolfsii is regularly an important factor in the propagation of this valuable ornamental. This year it was more abundant than usual.

Rose, Black spot, Diplocarpon rosae Wolf, has everywhere been abundant and destructive, causing defoliation, followed by die-back. Many home and professional growers have adopted the approved control measure of regular dusting with sulfur containing 6 percent red copper oxide or 10 percent basic copper sulfate, and have thereby been able to keep their rose bushes in full healthy foliage.

Chlorosis, as usual has become prevalent, with the advent of warm weather.

Weeds and Native plants

Downy mildews, rusts, and other fungi developed in unprecedented abundance in the thick stands of weeds and native plants along roadsides and in undeveloped fields.

Aster tenuifolius, (Salt Marsh Aster) powdery mildew, Oidium sp.

Chenopodium album downy mildew, Peronospora effusa (Grev.) Rabh. (Am. Auct.) = P. variabilis Gäumann.

Chloris cucullata, grass, growing in densely shaded stands of weeds showed an abundance of leaf killing due to Pyrenochaeta guminii E. and E, apparently a rather rare fungus.

Leucaena pulverulenta, a native leguminous tree, showed an abundance of leaf rust due to Ravenelia leucaenae Long II.

Nicotiana repanda, a native wild tobacco growing abundantly as a weed, was frequently found with downy mildew spots, identified as Peronospora tabacina Adam. The same disease was found in the Robstown area 150 miles north of the Valley. This first report of the fungus from Texas may be of special interest as it indicates that this section may have been one step in the possible migration of the fungus from Southern California to the tobacco sections of the Southeastern States (See Wolf et al, Phytopath. 24: p. 337, 1934). The occurrence of the same fungus on pepper, mentioned above, may be further evidence in that direction.

Oxalis drummondii rust, Puccinia oxalidis (Lev.) Diet. & Ell. was extremely abundant wherever this common weed grew, and resulted in the death of many plants.

Parthenium hysterophorus, (locally called wild cauliflower) rust, Puccinia melampodii Diet. & Holw. III.

Physalis macrophysa, a malvaceous weed, rust, Puccinia heterospora B. & C. II.

Solanum eleagnifolium, purple nightshade, leaf nematode, Ditylenchus phyllobius Thorne, heavily infested everywhere.

Sonchus oleraceus, sow thistle, downy mildew, Bremia lactucae Regel, was practically universal.

Sophia pinnata, tansy mustard, downy mildew, Peronospora parasitica Pers. ex. Fr. (Am. Auct.) = P. sophiae pinnatae Gäumann.

Verbesina encelioides downy mildew, Plasmopara halstedii (Farl.) Berl. & deT., called by some workers Rhysotheca halstedii (Farl.) G. W. Wils.

(Lower Ric Grande Valley Experiment Station, Weslaco, Texas.)

LOSSES FROM POTATO DISEASES IN THE HASTINGS SECTION, FLORIDA, IN 1941

A. H. Eddins

In the Hastings Section, Florida, in 1941 weather conditions were generally unfavorable for the development of potato diseases which caused a loss estimated at 7.7 percent of the crop. The average annual loss for the 10-year period (1932-1941) is 15.1 percent. The maximum loss of 30.5 percent occurred in 1937.

In 1941, late blight appeared about the middle of March and was very active for 3 weeks. During the remainder of the growing season extending to June 1, the disease spread very little as weather conditions did not favor its development. The loss was estimated at 4 percent which is less than the average annual loss of 5.2 percent.

Temperatures in March were too low for the development of brown rot. Furthermore, the Katahdin and Sebago varieties which are resistant to this disease were planted on 84 percent of the Hastings acreage; consequently, the loss amounted to only 0.5 percent which is the lowest recorded for the last 10 years.

Loss from ring rot was only a trace. Success in controlling this disease is due to refusal of growers to accept certified seed affected with it and to efforts made by certification officials in the seed-producing States to certify only those potato stocks that are free of ring rot.

Estimates of Losses Caused by Potato Diseases in the Hastings Section, Florida in 1941

Disease	Loss in Percent
Late blight, Phytophthora infestans	4.0
Rhizoctonia, R. solani	2.0
Brown Rot, Phytomonas solanacearum	0.5
Early blight, Alternaria solani	T*
Common Scab, Actinomyces scabies	0.5
Sclerotina rot, S. sclerotiorum	T
Southern wilt, Sclerotium rolfsii	T
Blackleg, Erwinia carotovora [E. phytophthora]	0.5
Fusarium seedpiece rot, Fusarium spp.	T
Rugose mosaic; virus	0.2
Leaf roll, virus	T
Spindle tuber, virus	T
Bacterial ring rot, Phytomonas sepedonica	T
Lenticel rot, Erwinia carotovora	T
Hair sprout, non-parasitic	T
Total	7.7

*Trace

(Florida Agricultural Experiment Station.)

POTATO LATE BLIGHT IN NEW YORK AND WISCONSIN

NEW YORK: In Suffolk County (Long Island,) late blight has been observed on the South Fork, but the hot, dry weather has dried it up. (W. G. Been, Weekly News Letter, June 30.)

WISCONSIN: Potato late blight was found in Langlade County on July 11. This is earlier than we ordinarily expect the start of this disease in Wisconsin, and foreshadows plenty of opportunity for a late blight epidemic if normal wet weather conditions prevail. (R. E. Vaughan, July 14, University of Wisconsin.)

PEACH LEAF CURL IN ILLINOIS IN 1941

G. H. Boewe

The incidence of peach leaf curl, Taphrina deformans, in Illinois in 1941 is shown by the data in the accompanying table. The data were taken in an examination of 105 plantings in 28 counties in the southern half of the state during the period April 22 to May 23. The disease had reached its full manifestation in each orchard examined, with the possible exception of those in Massac and Pulaski Counties. Vegetative growth had been very much retarded by cool weather and, according to growers, most of the leaf enlargement occurred during the warm weather of the week beginning April 13.

As is usually the case, the disease was either absent or present in very small amounts in those orchards in which a dormant spray was applied. Three exceptions should be noted. The planting in Gallatin County was sprayed with a hand power barrel sprayer. Orchard number 2 in Massac County was probably sprayed after the buds started to open, and orchard number 3 in Union County was sprayed when the wind was very strong.

Again, as in previous years, there is considerable variation in the amount of leaf curl in unsprayed orchards. No full sulfur summer spray schedule was applied last summer except in the southernmost counties Massac, Pulaski, and part of Union, where there was a fair crop of peaches. There appears to be no adequate explanation for the absence of leaf curl or the very light infection found in certain unsprayed orchards. However, the variation in the incidence of leaf curl in certain plantings receiving the same treatment can be accounted for by the resistance to curl of certain varieties and seedlings. Orchard number 2 in Edwards County had 2 trees with no leaf curl, and these trees were seedling sprouts coming from the stump. Orchards 7 and 8 in Johnson County are Elberta and seedling plantings respectively. In Wayne County, planting number 1 is Elberta while number 2 is Red Bird.

The relative amounts of leaf curl in 1940 and 1941 are indicated by data from an unsprayed orchard of 15 trees in Clark County. In it 62 percent of the leaves were infected in 1940 but only 15 percent in 1941.

County	Control Used	Number of trees in orchard	Percentage of trees with infection	Percentage of leaves infected on diseased trees	Average percentage of leaves diseased in orchard
Bond	Oil and Bordeaux	400	0.0	0.0	0.0
	Oil and Bordeaux	300	0.0	0.0	0.0
Christian	None	30	100.0	4.3	4.3

County	Control Used	Number of trees in orchard	Percentage of trees with infection	Percentage of leaves infected on diseased trees	Average percentage of leaves diseased in orchard
Clay	Oil and Bordeaux	1600	4.0	T	T
	Oil and Bordeaux	3800	65.0	T	T
	None	500	55.0	T	T
	None	1000	0.0	0.0	0.0
	None	300	0.0	0.0	0.0
Clark	None	15	100.0	15.0	15.0
	None	40	70.0	14.0	9.8
Cumberland	None	500	100.0	0.6	0.6
	None	400	100.0	T	T
	None	50	100.0	0.3	0.3
Edwards	None	7	100.0	10.4	10.4
	None	10	80.0	8.5	6.8
	None	1	0.0	0.0	0.0
	Oil and Bordeaux	40	20.0	T	T
	Oil and Bordeaux	40	20.0	T	T
	Oil and Bordeaux	60	10.0	T	T
Fayette	Not determined	250	0.0	0.0	0.0
	Not determined	600	20.0	T	T
Franklin	Not determined	300	100.0	7.0	7.0
	Lime sulfur	700	0.0	0.0	0.0
	Oil and Bordeaux	100	0.0	0.0	0.0
Gallatin	Oil and Bordeaux	800	100.0	2.5	2.5
Jackson	Not determined	12	8.3	T	T
	Oil and Bordeaux	2000	15.0	T	T
	Oil and Bordeaux	250	0.0	0.0	0.0
	Oil and Bordeaux	225	0.0	0.0	0.0
	Oil and Bordeaux	5000	0.0	0.0	0.0
	Oil and Bordeaux	450	0.0	0.0	0.0
Jasper	None	160	100.0	1.0	1.0
	Not determined	1000	40.0	T	T
Jefferson	Not determined	1800	10.0	T	T
	Not determined	2500	0.0	0.0	0.0
	Lime sulfur	800	0.0	0.0	0.0
	Lime sulfur	260	0.0	0.0	0.0

County	Control Used	Number of trees in Orchard	Percentage of trees with infection	Percentage of leaves infected on diseased trees	Average percentage of leaves diseased in orchard
	Not determined	100	96.0	T	T
	Oil and Bordeaux	2500	0.0	0.0	0.0
	Not determined	200	35.0	T	T
Johnson	None	1	100.0	T	T
	Oil and Bordeaux	500	8.0	T	T
	None	26	75.0	1.4	1.0
	Oil and Bordeaux	150	0.0	0.0	0.0
	Oil and Bordeaux	1000	0.0	0.0	0.0
	None	12	100.0	12.6	12.6
	None	50	100.0	21.9	21.9
	None	100	40.0	T	T
	None	1	100.0	63.0	63.0
Lawrence	Oil and Bordeaux	400	5.0	T	T
	Oil and Bordeaux	150	0.0	0.0	0.0
Madison	None	135	92.0	2.8	2.6
Marion	Not determined	200	10.0	T	T
	Oil and Bordeaux	2200	65.0	T	T
	None	8	100.0	6.75	6.75
	None	50	0.0	0.0	0.0
	None	500	30.0	T	T
Massac	Oil and Bluestone	200	0.0	0.0	0.0
	Lime sulfur	250	100.0	12.6	12.6
	Lime sulfur	1400	0.0	0.0	0.0
	Lime sulfur	500	5.0	T	T
	None	250	100.0	25.6	25.6
	Oil and Bordeaux	1850	0.0	0.0	0.0
	Oil and Bordeaux	400	15.0	1.3	0.2
	Oil and Bordeaux	850	0.0	0.0	0.0
	Lime sulfur	1200	0.0	0.0	0.0
Perry	None	1000	0.0	0.0	0.0
	Oil and Bordeaux	5000	0.0	0.0	0.0
	Oil and Bordeaux	2000	0.0	0.0	0.0
Pulaski	None	200	0.0	0.0	0.0
	Oil and Bordeaux	350	0.0	0.0	0.0
	Not determined	50	100.0	11.0	11.0
	None	7	100.0	8.3	8.3
	Lime sulfur	170	0.0	0.0	0.0
	None	1	100.0	1.0	1.0

County	Control Used	Number of trees in orchard	Percentage of trees with infection	Percentage of leaves infected on diseased trees	Average percentage of leaves diseased in orchard
Richland	None	4	100.0	3.3	3.3
	Not determined	450	25.0	T	T
	None	4	0.0	0.0	0.0
St. Clair	None	39	0.0	0.0	0.0
	Oil and Bordeaux	270	0.0	0.0	0.0
	Oil and Bordeaux	140	0.0	0.0	0.0
Saline	Oil only	60	0.0	0.0	0.0
	None	200	45.0	T	T
	Oil only	60	0.0	0.0	0.0
	Oil only	20	0.0	0.0	0.0
Union	None	40	0.0	0.0	0.0
	None	250	100.0	6.1	6.1
	Lime sulfur	300	40.0	2.7	1.1
	None	100	10.0	1.0	0.1
	Not determined	350	0.0	0.0	0.0
	None	16	68.75	0.2	0.13
Washington	Not determined	450	5.0	T	T
	Not determined	170	0.0	0.0	0.0
	Lime sulfur	200	5.0	T	T
	Not determined	250	0.0	0.0	0.0
Wayne	None	65	100.0	3.3	3.3
	None	30	0.0	0.0	0.0
	Not determined	17	100.0	2.6	2.6
	Not known	700	100.0	1.2	1.2
White	None	100	100.0	4.7	4.7
	Oil and Bordeaux	2200	90.0	T	T
	None	4	100.0	7.0	7.0
Williamson	Not determined	600	5.0	T	T
	Lime sulfur	200	0.0	0.0	0.0
	None	28	50.0	T	T

Section of Applied Botany and Plant Pathology
Illinois Natural History Survey
Urbana, Illinois

REPORTS ON CEREAL DISEASES

LEPTOSPHAERIA ON MAIZE IN COSTA RICA: A specimen of leaves of maize characterized by numerous dead spots bearing fungus fructifications was submitted for identification of the fungi by Señor Rodolfo Vicente from San Jose, Costa Rica. He considers the fungi to be the cause of the diseased condition.

The fungus chiefly in evidence is referable to Leptosphaeria but appears to be unlike any of the several described species known upon maize and related grasses. It is noteworthy, however, that in the Mycological Collections of the Bureau of Plant Industry, there is a specimen from Darjeeling, India, dated 1920, and erroneously labeled L. punctiformis, that bears perithecia identical with those of the Costa Rican specimen. Although this Indian specimen was issued without a number under the label "Herb. Crypt. Ind. Orient.", it is not listed in the Fungi of India (1931) by Butler and Bisby or in Mundkur's Supplement I (1938).

On the Costa Rican specimen there are numerous fructifications of a Pyrenochaeta, possibly also undescribed, which may not be without interest in connection with the life cycle of the Leptosphaeria or, if independent, in relation to the spotting of the leaves. (William W. Diehl, Division of Mycology and Disease Survey.)

STEM RUST IN TEXAS: During the last 10 days of May, weather conditions were more favorable for small grains and for harvesting operations which now are under way. Total precipitation for the month was 2.60 inches, which is below normal, but rain was recorded on 13 days. The maximum temperature for the month was 92° and the lowest 53° F. The mean temperature for the month was 3.1° above normal.

During the past 10 days, small grain crops have matured rapidly. All fall-sown oats and barley in experimental plantings are cut, and much of the fall-sown grain on farms also is cut. Harvesting the early-maturing varieties of wheat is just starting. Susceptible varieties such as Red May, Fultz, and Mediterranean will produce low yields of shriveled grain due to stem rust [Puccinia graminis] injury. Tenmarq and other Kanred type wheats have been resistant to rust until just recently, since it seems the races which attack these varieties have not been present until late in the season, and as a result such varieties are injured very little. Yields of fall-sown oats and barley are much below average, owing to excessive rainfall during the spring. (I. M. Atkins, June 1, Division of Cereal Crops and Diseases.)

CONDITION OF SMALL GRAINS IN KANSAS: (May 27)--Small grains continue to make excellent growth in most parts of Kansas during May. However, the condition of both wheat and oats is poor in many localities in the eastern part of the State, owing to too much cool, wet weather and water-logged soil. Most of the oats in the State were sown late and the crop remains late and many fields appear yellow.

Winter wheat is in excellent condition in the western half of the State and is further advanced than the crop in eastern counties. It appears now that western Kansas will have the largest wheat crop since 1932 and the first real crop in several years.

The disease situation in the State is most interesting. Leaf rust [Puccinia rubigo-vera tritici] is fairly general on wheat but has failed to develop as rapidly as expected, owing to cool weather. Primary infections of stem rust of wheat were found at Manhattan on May 19 and again on May 23. On a recent trip to Texas the writer was unable to find stem rust in wheat fields in central Kansas but did find traces in extreme south-central Kansas on May 21. In north-central Oklahoma rather heavy infections were found on soft wheats but only traces were found on hard wheats. However, at least a trace of stem rust was found in every field inspected in Oklahoma. Leaf rust was heavy on most of the wheats of Turkey type between Manhattan, Kansas, and Denton, Texas, but was light on Chiefkan. The large acreage of Chiefkan in central Kansas undoubtedly will reduce the amount of leaf and stem rust infection in Kansas this year.

Other diseases of wheat that are very conspicuous this year are mildew [Erysiphe graminis] and speckled leaf blotch (Septoria tritici). Mildew has been severe until lately but now is disappearing from commercial fields without seeming to have done much damage. The leaf blotch is the most general and severe infection of that disease the writer ever has observed. In many fields in Oklahoma all leaves already have dried up due to Septoria. Throughout central Kansas and Oklahoma infections are heavy even on flag leaves with the crop mostly still in the soft dough stage.

There also has been an unusually heavy infection of mosaic [virus] in Kansas this year. In central Kansas some fields of Tenmarq have been practically destroyed by a combination of yellow mosaic and hessian fly.

(June 18)--Although there was a deficiency of rainfall at Manhattan in May, there was abundant precipitation in nearly all other parts of the State. Crops made fairly good growth, but were retarded in many localities by subnormal temperatures and too much rain.

The first half of June was a very wet period and nearly all major rivers in the State have been at or near the flood stage. Crop damage from flooding has been extensive in the river valleys. In fact, there has been too much rain for the best development of winter wheat and farmers are concerned about the prospects of a wet harvest. The first wheat harvested in south central and southwestern counties has been disappointingly low in test weight.

Despite cool weather in May, which retarded rust development, this is proving to be a year of severe losses from some rust. Crown rust [P. coronata] of oats is present in epidemic proportions in the eastern half of the State and will cause severe losses. The leaf rusts

of rye and barley [P. rubigo-vera secalis, P. anomala] are the heaviest the writer ever has observed. Leaf rust of wheat is as heavy as in 1938, but late development of infection prevented extreme losses. Stem rust now is becoming prevalent on susceptible varieties of both wheat and oats. Winter wheat is so near maturity that the losses from that rust will not be large. Cool weather, a large acreage of semi-resistant varieties, and the prevalence of physiologic race 17 all were factors delaying development of stem rust of wheat in Kansas in 1941. (C. O. Johnston, Division of Cereal Crops and Diseases.)

A CORRECTION--DISEASES OF SMALL GRAINS IN SOUTH CAROLINA: On page 315 of the June 15 issue, the report from Horry County in the fourth paragraph should read as follows:

"In Horry County in 2 fields of Redheart, both rust and mildew were seen; in one field of Redheart, mildew but no rust; in one field of Hardired, no mildew and only flecks of rust, probably indicating resistance. Many other fields showed moderate rust."

That is, the third mention of the variety Redheart should have been Hardired instead. (Geo. M. Armstrong, June 21. Clemson Agricultural College.)

BRIEF NOTES ON PLANT DISEASES

A NEW HOST FOR THE X-DISEASE VIRUS: The virus of X-disease of peach has been successfully transmitted to the western sand cherry (Prunus besseyi) by budding with diseased peach buds. The symptoms are expressed by a distinct dwarfing of the growth and yellowing of the foliage. Plants of the wild plum (Prunus hortulana) budded with diseased peach buds have so far not shown any symptoms but the shoots growing from the diseased buds show typical symptoms of X-disease. This would suggest that P. hortulana is immune or is a symptomless carrier of the disease. Budding experiments to determine this are in progress. (E. M. Stoddard, Connecticut Agricultural Experiment Station, New Haven.)

SURVIVAL OF THE ONION BULB NEMATODE IN NEW YORK: The finding of onions on three farms in the Canastota area showing nematode [Ditylenchus dipsaci] infestation by the second week in June shows this pest able to survive and spread during a comparatively dry spring. Perhaps the most significant findings occurred on volunteer onions in a wheat field 100 yeards from the muck where several bushels of culls from last year's infested spots had been thrown last August and plowed under later. Flood conditions any time during the summer could perhaps carry nemas from these culls quite a distance. Cull onions should be burned, not buried; destroyed, not just dumped somewhere to rot. (A. G. Newhall, Weekly News Letter, June 23.)

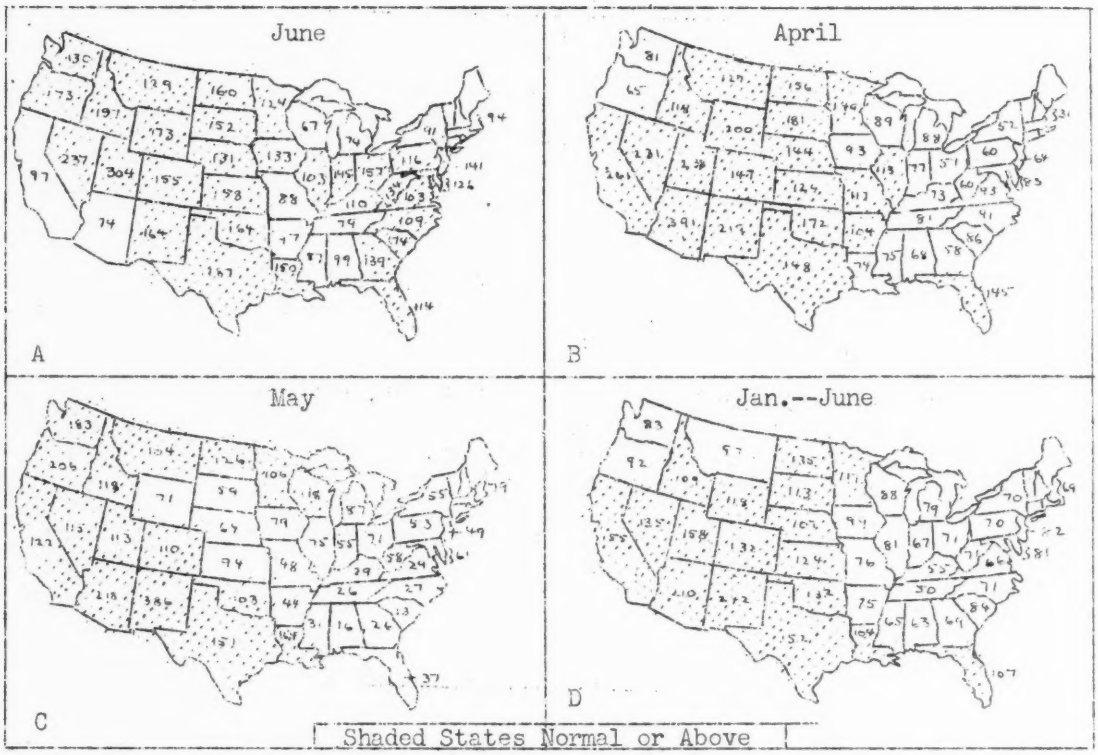

Fig. I--Percentage of Normal Precipitation by States, 1941

JUNE WEATHER

The weather of June, as a whole, was characterized by uniform, mostly moderate, temperatures and widespread abnormal precipitation, the latter especially from the Great Plains westward. In the eastern half of the country, the monthly mean temperatures were rather generally from 2° to 4° above normal from the middle Mississippi Valley and the Ohio River northward and northeastward and were near normal, tending to slightly above normal, in the Atlantic area and the South. From the Great Plains westward, the means were 2° or 3° above normal in most northern sections and 1° to 3° below normal in Central and Southern States. For the country as a whole, temperatures were more than usually near normal values.

Fig. 1A shows that rainfall in June was substantial to heavy, ranging from slightly above normal to much above in most sections of the country. The amounts were abnormally heavy generally in the Great Plains States from the Canadian border to the Rio Grande, the precentages ranging from 129 percent of normal in Montana to 187 percent in Texas. Also the Great Basin of the West had two or three times the normal precipitation.

East of the Mississippi River, where May was extremely dry, June rainfall was heavy in many areas. The New England group of States and New York, Michigan, Minnesota, Tennessee, Alabama, and Mississippi had less than normal rainfall, but all other States had above normal. There were some marked contrasts in this area between June rainfall and that for the preceding month. It was the driest May of record in Kentucky and South Carolina and the second driest in Virginia, North Carolina, and Georgia, and all of these had above normal in June; South Carolina had the wettest June in 35 years. In the Great Plains States, it was the second wettest June of record in North Dakota while in South Dakota it was the wettest since 1925 and in Kansas since 1928. For convenient comparison there are included in Fig. 1 the percentages of normal rainfall by States for April and for May.

Fig. 1D shows that, notwithstanding the heavy June rains, nearly all States from the Mississippi Valley eastward, had accumulated amounts for the first half of 1941 (January--June) markedly below normal. Minnesota and Florida were the only States having above normal for these 6 months. From the Great Plains westward, on the other hand, all States, except Montana, Washington, and Oregon had above normal precipitation for this period. The 6-month totals were outstandingly large in most of the Great Plains, especially in the South. Texas had much above normal in every month from February to June, inclusive, the accumulated amount for the period being more than one-and-a-half times normal. Oklahoma had above normal every month, except March, from November to June, the total for the 8 months being nearly one-and-a-half times the normal.

(From U. S. Department of Commerce, Weather Bureau, Weekly Weather and Crop Bulletin for week ending July 8, 1941.)